

## **Report**

### **Preamble**

Vidyalankar Institute of technology (VIT) always promotes interaction with industries and research laboratories to inculcate research culture among faculty and students. In view of this Mr. Anand Paralkar of Vidyalankar Consultancy Services along with Biomedical Engineering Department of VIT approached Dr. Badri .N. Pandey , Head, Radiation Signalling and Cancer Biology Section, BARC who is the Secretary of the society to conduct a value added course/workshop for the benefit of students. We were fortunate that he agreed to conduct a workshop and fixed the date as Saturday, October 15, 2016.

### **About Society for Radiation Research**

Society for Radiation Research is a Society of Scientists, Clinicians, Students, Academia and Industries having interest in field of Radiation Research. The society is started with the following objectives:

1. To promote research in the areas of:  
Radiation biology with basic and applied aspects;  
Clinical radiation biology and oncology;  
Radiation hormesis and low dose radiation biology;  
Environmental radiation biology, non-ionizing radiation effects;  
Radiation medicine, radiation technologies;  
Transnational research;  
Terrestrial and space radiation biology and any other relevant research areas.
2. To facilitate integration and interaction of different radiation research areas.
3. To promote the diffusion of knowledge in these research areas through organizing meetings, conferences, workshops, awareness programs, scientific publications etc.
4. Promote discussion, interactions amongst scientist-public-industry and acting as liaison to communicate facts and research developments to public, government and regulatory bodies.
5. Integration of Society with other National and International Scientific Bodies.
6. Facilitate and promote research in areas of radiation research by various means. Encourage and promote young researchers and students to pursue research and build career in the areas of radiation research
7. Promote and facilitate education of radiation research in national Institutes and Universities.

### **About Biomedical Engineering Department, VIT**

The Biomedical Engineering Department of VIT has a clear vision to become a **Center of Excellence** in the field of Biomedical engineering where learners are nurtured in a scholarly environment to evolve into competent professionals to benefit society. The department has also received an **NBA Accreditation** under the leadership of **Dr. Gajanan Nagare**, HOD, Biomedical Engineering.

### About the Workshop

Schedule of the program was finalised and brochures were prepared and was distributed to members of the society as well as Faculty of Mumbai University. It was also circulated among IEEE Bombay Section members. Around 55 participants including Doctors Scientists, Faculty, Research students and Graduate students had attended the workshop.

### Overview of the Workshop

The program started with a simple inaugural function which was presided over by honoured guests Dr. Shyam Srivastava, Vice President, SRR and Professor & Head, Department of Radiation Oncology, Tata Memorial Hospital, Mumbai, Dr. Badri Pandey, Secretary, SRR and Head, RSCBS, RBHSD, BARC, Dr. Sudhakar Gaonkar, Chief Executive Officer, VIT and Dr. Sangeeta Joshi, Professor and Technical Advisor, Vidyalankar Dnyanapeeth Trust. The function started with Saraswati Vandana which was followed by a brief note about VIT's activities and the importance of such workshops for the growth of students by Dr. Sudhakar Gaonkar, CEO, VIT. A brief overview about department of Biomedical Engineering and its



Dr. Sudhakar Gaonkar, CEO, VIT



Inaugural Function



Dr. Shyam Shrivastava,  
TMH, Mumbai



Dr. Sangeeta Joshi, Professor, Biomedical  
Department and Technical Advisor VIT



Dr. Badri .N. Pandey , Head, Radiation Signalling and Cancer Biology Section, BARC

Inaugural Function

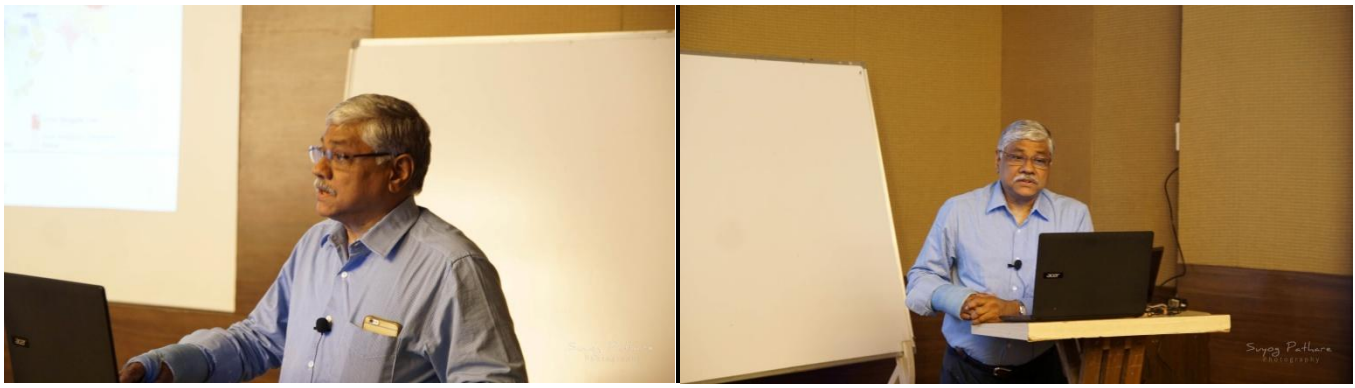
activities were given by Dr. Sangeeta Joshi. Following this Dr. Pandey elaborated on the purpose of the Society for Radiation Research and its objectives. Dr. Shrivastava in his speech expressed how important is Engineers' and Scientists' role along with medical practitioners in the success of medical profession. He compared the technology change and its impact on the methodology used in cancer treatment in particular. The inaugural session ended with a tea break.

In the first technical session by Dr. Amit Kumar, Scientific Officer, RB&HSD, BARC, Mumbai on “**Radiation Effects on Biological Systems: Mechanism and Modifications**” the speaker elaborated on the various methods used for testing the radiation effects on living organisms like mice. He started from Marie Curie, how she was affected by radiations during her experimental time. He also emphasized the effect of oxygen and its effect in cancer diagnosis and therapy.



Dr. Amit Kumar, Scientific Officer, RB&HSD, BARC

Second session was by Dr. S. K. Shrivastava, Professor & Head, Radiation Oncology, Tata Memorial Hospital on “**Brachytherapy of Cancer: Excitements and Challenges**”. In the session he mentioned about earlier days of Marie Curie when radiation Spas are used for beauty treatments and radium salts used for tumour treatments. He then elaborated on brachytherapy which is used for internal radiation therapy of cancer. He emphasized that how it is effective for organ conservation while cancer radiotherapy. He mentioned that by indigenously developing these equipments we can reduce the cost of treatment considerably. He also stressed the importance of Biomedical Engineers and Scientists who can work together to achieve this goal. This session was followed by lunch break.



Dr. S. K. Shrivastava, Professor & Head, Radiation Oncology, Tata Memorial Hospital

The third session was on” **Radiopharmaceuticals: An overview**” by Dr. Grace Samuel, Ex Head of the Radiopharmaceuticals Evaluation Section, BARC. In the session, she elaborated on the significance of radiopharmaceutical products and its importance in diagnosis and treatment of various diseases and cancer in



Dr. Grace Samuel, Ex Head of the Radiopharmaceuticals Evaluation Section BARC

particular. She mentioned specific radiopharmaceuticals used for SPECT/ SPECT – CT, PET/PET - CT, etc. She elaborated on radioactive pharmaceutical products in pathology laboratories and the effectiveness and reliability of such tests compared to the new products available in market.

The fourth session was by **Dr. Nagaraj Huilgol**, President of the Society, a renowned Radiation Oncologist and Chief Radiation Oncologist at Nanavati Super speciality Hospital, Mumbai. In his session on “**External Beam Radiotherapy of Cancer**” he elaborated on how the new technology and new imaging equipments help in focussing the external radiations to the affected areas. He also explained how the radiation therapy



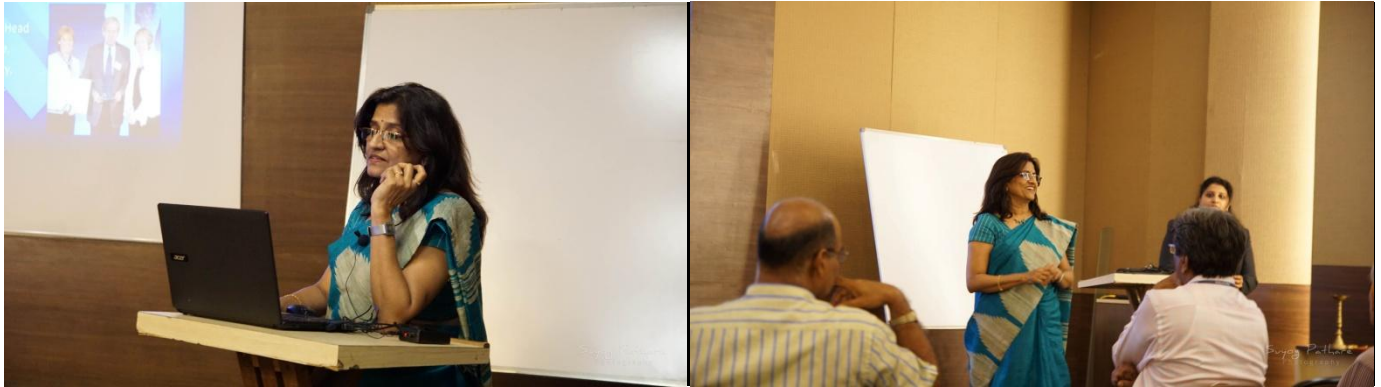
Dr. Nagaraj Huilgol, Chief Radiation Oncologist at Nanavati Super speciality Hospital



Dr. Nagaraj Huilgol felicitated by Dr. Jitendra Toravi, Professor, Biomedical Department, VIT

in initial times used to affect neighbouring organs and the treatment used to be difficult. In the new equipments it has been easier to localise the treatment in the affected areas. He also motivated the participants to make the equipments in India instead of buying/importing them so that the treatment cost can be reduced considerably.

The last session of the workshop was by **Dr. Savita Kulkarni**, Head, Tuberculosis Immunology & Immunoassay Development Section, RMC Parel, Mumbai was on “**Radioimmunoassay based Diagnostic Techniques**”. In this session Dr. Kulkarni explained the importance of radioisotopes



Dr. Savita Kulkarni, Head, Tuberculosis Immunology & Immunoassay Development Section RMC Parel, Mumbai

based tests on the diagnosis of diseases. According to her these procedures are very safe, cheap and reliable. Due to lack of awareness and technical competent staff, pathological laboratories opt for other testing procedures. She explained the diagnosis of various diseases in which the Radioimmunoassay gives best results giving an example of diagnosis of thyroid based diseases.

All the sessions were quite interactive and the participants were involved in the session which was obvious from the level of questions asked by them. The speakers were very happy that the audience were asking relevant questions after every session which validated all the concepts taught in the workshop.



Feedback by participant Prof. Sangharsh



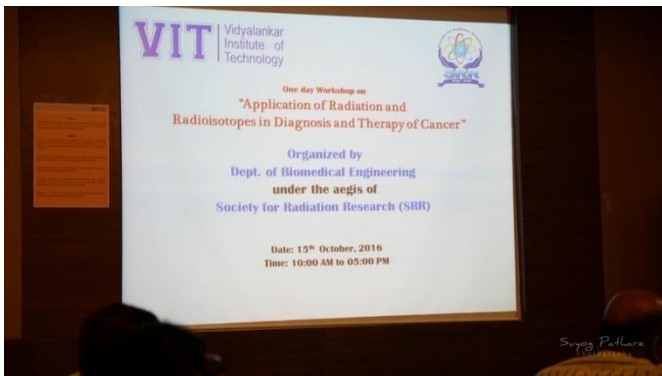
Feedback by student Rutuja Chandrarao



Vote of Thanks by SRR Dr. Badri Panday

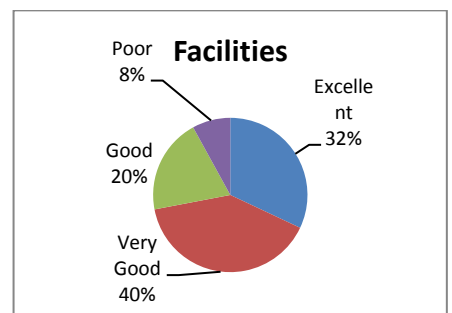
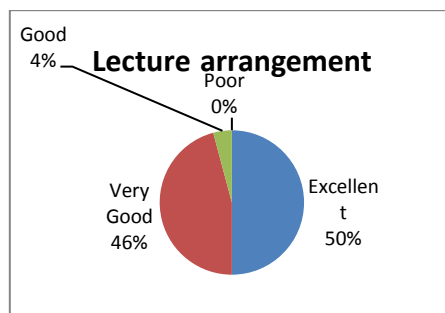
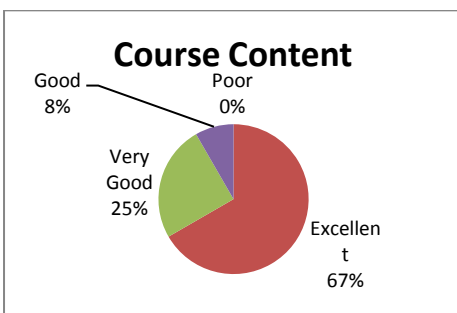


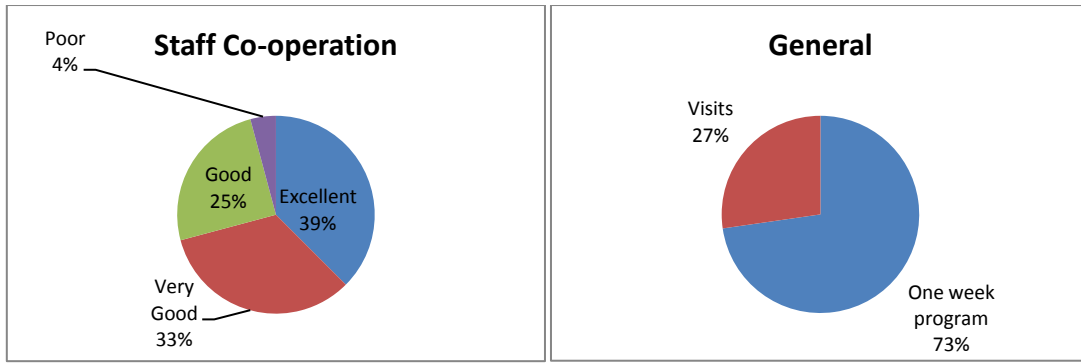
Vote of Thanks by VIT, Prof. Geetha Narayanan-Convener



The session came to a conclusion with feedbacks from the participants. One of the participant Prof. Sangharsh from Wattumal Institute expressed how effective was this workshop in the field of nuclear medicine and this will create a new dimension to her teaching of the subject by attending this workshop. A student Rutuja Chandrarao also expressed her understanding on how the workshop helped in not only understanding the role of a Biomedical Engineer in the aspects of Radiation in Medicine but also the integration of the two technological worlds namely Biomedical and Biotechnology. A written feedback was taken from all the participants. This was followed by vote of thanks by Dr. Pandey on behalf of SRR and Prof. Geetha Narayanan Convener from VIT. The workshop ended with National Anthem.

**Feedbacks on various aspects of the workshop**





**Report Prepared by:**

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